

CC3320/CC4620 Series Color Cameras

Installation/ Operation Manual

C1932M (8/99)



INTRODUCTION

These instructions cover Pelco's CC3320 and CC4620 Series cameras. Read all of these instructions. Use them to install your camera and have them available for its lifetime. Refer to Table A for the camera models and their features. All cameras in the range are fitted with a direct drive (DD) lens connector, have adjustable back focus and accept C and CS lenses.

TABLE A

Option	CC4620-3	CC4620-2X	CC3320-3	CC3320-2X
Color	●	●	●	●
Resolution (TVL)	480	480	330	330
Sensitivity (lux @ f1.2)	1.0	1.0	0.9	0.9
CCD Sensor size	1/3"	1/3"	1/3"	1/3"
Sony HyperHAD CCD	●	●	●	●
Adjustable Gamma (0.45 and 1.0)	●	●	●	●
Automatic Gain Control (AGC)	●	●	●	●
AGC on/off	●	●	●	●
Backlight Compensation (BLC)	●	●	●	●
BLC on/off	●	●	●	●
Manual Shutters	●	●	●	●
Flickerless	●	●	●	●
Electronic Iris (EI)	●	●	●	●
EI on/off	●	●	●	●
4 White Balance modes*	●	●	●	●
Auto Iris connection	●	●	●	●
Line lock with phase adjust (AC only)	●	●	●	●
Dimensions				
4.82 (L) x 2.57 (W) x 2.34 (H) inches (12.25 x 6.55 x 5.95 cm)	●	●	●	●
Supply				
11 - 40 VDC or 14 - 30 VAC, 50/60Hz		●		●
230 VAC + 10% -15% 50Hz	●		●	

* 4 Modes = Auto Tracing (ATW), Indoor, Outdoor and Fluorescent

⚠ WARNING

- Ensure installation and servicing is carried out by qualified personnel.
- Isolate from the supply circuit before any servicing.
- Installation method and materials must be capable of supporting four times the total weight of the unit.
- Power supply cords must be connected as defined in national electrical codes of practice for Class 1 earth protected equipment.
- Low voltage cameras must be connected as defined in national electrical codes of practice for Class 2 protection of double or reinforced insulation.
- Safety critical components must only be replaced with recommended parts.



The maximum load on the rear (auto-iris) connector must not exceed 50 mA.
The maximum load on the direct drive connector must not exceed 25 mA.

REGULATORY NOTICES

Federal Communications Commission Part 15 - Digital devices

This Device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference that may cause undesired operation.

CERTIFICATIONS

This product meets the requirements of the following standards:

Electromagnetic Compatibility

EN55022: 1995 limits and methods of measurement of radio disturbance characteristics of information technology

EN50082-1: 1992 Generic immunity standard

Comprising:

IEC 1000-4-2: 1995 Electrostatic discharge

IEC 1000-4-3: 1995 Radiated electromagnetic fields

IEC 1000-4-6: Immunity to conducted disturbances, induced by radio-frequency fields

IEC 1000-4-4: 1995 Fast transient bursts

Safety

EN 60950: 1992 Safety of information technology equipment, including electrical business equipment

DECLARATIONS

The manufacturer declares that the equipment supplied with this manual is compliant with the EMC directive 89/336 EEC and the low voltage directive 73/23 EEC and CE marked accordingly.

⚠ CAUTION

In order to avoid damaging your camera, note the following points.

- 1) The camera has threaded mounting points on the top and bottom of the case. Only use a standard, photographic mounting bolt with a 1/4-20 UNC thread.
- 2) Before fitting the lens, make sure that its back will not touch the CCD sensor or associated components when fully installed.
- 3) Do not touch the image surface of the sensor. If the sensor is accidentally touched, only clean it using isopropanol.
- 4) Do not expose the sensor to direct sunlight as this may impair the performance of the camera.

POWER SUPPLY

The CC3320 and CC4620 Series cameras are available in 230 VAC or 11-40 VDC/14-30 VAC low voltage types. **The voltage required to operate the camera is clearly marked on the rear panel of the camera.** The green POWER LED on the rear panel indicates that power is connected. **Power the low voltage cameras only from a class 2 isolated power supply.** The power consumption is less than 5 Watts.

230 VAC Power Supply

Cameras that are intended to operate directly from 230 VAC are fitted with a non-detachable power supply cord. The voltage of operation is clearly marked on the rear panel of the camera. Generally this is 230 VAC +10%/ -15% at 50 Hz. Refer to the wiring instruction label attached to the supply cord and terminate the cord with the appropriate circuit with a 3A fuse. **CAMERAS MUST BE CONNECTED TO A PROTECTIVE EARTH GROUND.** Ensure that a secure means of isolation from the AC power is provided for the camera in accordance with the national wiring regulations of the country of installation.

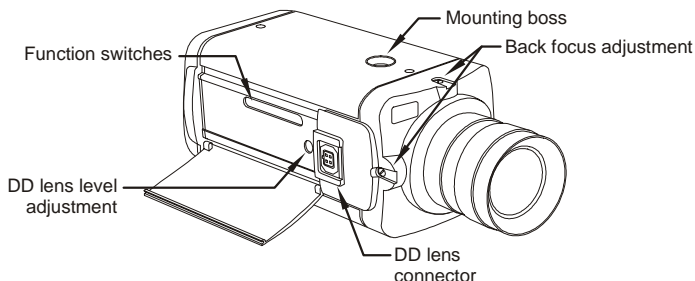
Auto-switching power supply

Cameras fitted with an automatic selecting power supply operate between 11-40 VDC and 14-30 VAC. Connections and polarity are indicated above the screw terminals on the rear panel. **The power supply must be a class 2 isolated type.**

VIDEO CONNECTIONS

To obtain a video output, connect a video coaxial cable terminated with a 75Ω BNC connector to the BNC socket marked VIDEO OUT on the rear of the camera.

On the side of the camera is a hinged flap. The hinged flap covers a lens level potentiometer and 10 function switches.



Color Balance

There are four color balance modes selected by DIP switches 1 and 2. For the majority of applications the **Auto** setting will provide excellent color rendition and is the default setting. For applications where the illumination is predominantly daylight, the **Outdoor** setting may provide improved color rendition over **Auto**. Where a mixture of illuminations such as tungsten, fluorescent and daylight exist, the **Indoor** setting may provide the best color rendition. Where fluorescent lighting is predominant, use the **Fluorescent** setting.

- 1 2 ☐ ☐ Auto
- ☐ ☐ Indoor
- ☐ ☐ Fluorescent
- ☐ ☐ Outdoor

Gamma

There are two different levels of Gamma selected by DIP switch 3. Choose between **Normal** (0.45) to provide increased visibility in dark areas of the scene, or **Linear** (1.0). The default setting is **Normal**.

- 3 ☐ Normal (0.45)
- 3 ☐ Linear (1.0)

AGC (Automatic Gain Control)

The Automatic Gain Control feature can improve picture quality when levels of illumination are low. Select **ON** or **OFF** using DIP switch 4. For most applications, the AGC should be **ON** and is the default setting.

- 4 ☐ Off
- 4 ☐ On

LL-PH (Line Lock, Phase Adjust)

The Line Lock, Phase Adjust feature is selected by DIP switches 5 and 6. Choose **Fixed** or **Adjustable**. Both settings are line-locked; however, the **Adjustable** setting allows $\pm 120^\circ$ phase adjustment via the potentiometer located on the rear of the camera. The **Adjustable** mode should be used when cameras are connected to different AC power supply phases. Default setting is **Fixed**.

- 5 6 ☐ ☐ Fixed
- 5 6 ☐ ☐ Adjustable

SYNC (Synchronization)

The Synchronization feature is selected using DIP switch 6. Choose **LL** (Line-Lock) or **Internal**. **LL** locks the frame rate to the power supply frequency so that cameras are triggered at the same point on the power supply AC cycle. **Internal** locks the frame rate to the internal oscillator of the camera. The default setting is **LL**.

- 6 ☐ Internal
- 6 ☐ L-L

FUNCTION SWITCHES

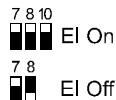
Shutter speed switches

Shutter speeds are selected with DIP switches 8, 9 and 10. DIP switch 7 must be down to enable manual shutter speed selection. For EI, BLC and Flickerless functions, switch 7 must be up.

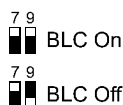
 1/10,000	 1/2,000	 1/500	 1/125
 1/4,000	 1/1,000	 1/250	 1/50

EI (Electronic Iris)

The EI (Electronic Iris) feature compensates for excessive light level by automatically adjusting shutter speed. Selecting Electronic Iris disables manual shutter speed selection. The Electronic Iris setting must not be used when the camera is set to Flickerless mode. The default setting is Electronic Iris **ON**.

**BLC (Back Light Compensation)**

The BLC (Back Light Compensation) feature compensates for back-lit scenes by enhancing objects in the center of the scene which would previously have been in silhouette. Select **ON** or **OFF** using the BLC switch. Default is **OFF**. BLC will only function with a manual iris lens when the Electronic Iris feature is switched on. For direct drive and auto iris lenses, BLC will still function even though the Electronic Iris feature is switched off.

**Flickerless**

The Flickerless setting can reduce the flicker caused by certain lighting conditions. Choose between **ON** or **OFF**. The default setting is **OFF**. Note that the Electronic Iris setting must be off for correct operation of the Flickerless function.



LENS SELECTION

Suitable lens types are C and CS mount in fixed iris, manual iris, auto-iris or direct drive versions. Sizes are shown below. Cameras are factory set for CS mount lenses. If using a C mount lens, rotate either of the back focus screws approximately 30 turns counterclockwise before installing the lens.

Lens size	CC4620-3	CC4620-2X	CC3320-3	CC3320-2X
1/3"	●	●	●	●
1/2"	●	●	●	●
2/3"	●	●	●	●
1"	●	●	●	●

Fixed and manual iris lenses (for indoor use only) require no wiring connections.

Auto-Iris Lenses

Connections for auto-iris lenses are located on the rear of the camera. Connect auto-iris lenses to the 3-terminal connector according to the diagram below.

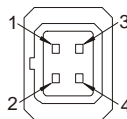
Direct Drive

Connect DD lenses to the female 4-pin socket on the side of the camera. If the lens does not have a DD plug fitted, then wire the lens to a suitable plug in accordance with the diagram below.



+ = Lens positive supply
⏏ = Lens ground
V = Video drive signal

Auto-Iris Lens Connections



1 = Damp -
2 = Damp +
3 = Drive +
4 = Drive -

DD Lens Connector

LENS SETUP PROCEDURES

For manual or fixed iris lenses set the EI switch and AGC switch to **ON**.

Auto-Iris Lenses

Switch the EI and AGC **OFF**. Refer to the lens instructions and adjust the lens for the optimum picture (video output level of 1V peak-to-peak). Switch the AGC **ON**.

Direct Drive Lenses

Where fitted, switch the EI and AGC **OFF**. Use an appropriate screwdriver to turn the lens level potentiometer (under the hinged flap) fully clockwise. Next, slowly adjust the potentiometer counterclockwise until the optimum picture is obtained (video output level of 1V peak-to-peak). Switch the AGC **ON**.

FOCUS ADJUSTMENT

The back focus adjustment screws are located on the top and side of the case at the front of the camera and should be adjusted using an appropriate screwdriver. Do not 'over turn' the back focus mechanism.

Fixed Lenses

Set the lens focus to infinity and view an image greater than 6.5 feet (2 m) away. Focus the image using the back focus screw. Set the lens focus as required.

Manual Iris Lenses

Open the iris fully and set the lens focus to infinity. View an image greater than 6.5 feet (2 m) away. Focus the image using the back focus screw. Set the lens focus and iris as required.

Auto-iris and Direct Drive Lenses

Fully open the iris by covering the lens with a suitable neutral density (ND) filter. Set the lens focus to infinity. View an image greater than 6.5 feet (2 m) away. Focus the image using the back focus screw. Remove the ND filter and set the lens focus as required.

FOCUS ADJUSTMENT

Zoom Lenses

Set the lens focus to infinity and fully open the iris by covering the lens with a suitable neutral density (ND) filter. Zoom out to the widest field of vision and view a distant object. Adjust the back focus screw until the object is in focus. Next, zoom fully in and adjust the lens focus until the object is again focused. Repeat these steps until the full zoom range may be viewed with the minimum loss of focus.

SYNCHRONIZATION

Cameras that operate from AC power supplies are line-locked for a supply frequency of 50 Hz. If the supply frequency is unstable, then disable the line lock by setting the SYNC switch to **Internal**.

WARRANTY AND RETURN INFORMATION

Pelco will repair or replace, without charge, any camera proved defective in material or workmanship for a period of two years after the date of shipment.

Pelco will warrant all replacement parts and repairs for 90 days from the date of Pelco shipment. Repairs made necessary by reason of misuse, alteration, normal wear, or accident are not covered under this warranty.

Pelco assumes no risk and shall be subject to no liability for damages or loss resulting from the specific use or application made of the Products. Pelco's liability for any claim, whether based on breach of contract, negligence, infringement of any rights of any party or product liability, relating to the Products shall not exceed the price paid by the Dealer to Pelco for such Products. In no event will Pelco be liable for any special, incidental or consequential damages (including loss of use, loss of profit and claims of third parties) however caused, whether by the negligence of Pelco or otherwise.

The above warranty provides the Dealer with specific legal rights. The Dealer may also have additional rights, which are subject to variation from state to state.

If a warranty repair is required, the Dealer must contact Pelco at (800) 289-9100 or (559) 292-1981 to obtain a Repair Authorization number (RA), and provide the following information:

1. Model and serial number
2. Date of shipment, P.O. number, Sales Order number, or Pelco invoice number
3. Details of the defect or problem

If there is a dispute regarding the warranty of a product which does not fall under the warranty conditions stated above, please include a written explanation with the product when returned.

Method of return on warranty shipments shall be the same or equal to the method by which the item was received by Pelco.

In order to expedite parts returned to the factory for repair or credit, please call the factory at (800) 289-9100 or (559) 292-1981 to obtain an authorization number (CA number if returned for credit, and RA number if returned for repair). Goods returned should be clearly identified with the assigned CA/RA number and freight should be prepaid. All merchandise returned for credit may be subject to a 20% restocking and refurbishing charge.

Ship freight prepaid to:

- Pelco, 300 West Pontiac Way, Clovis, CA 93612-5699, or
- Pelco c/o American Overseas Airfreight, 320 Beach Road, Burlingame, CA 94101 (if shipped outside the United States)

REVISION HISTORY

Manual #	Date	Comments
C1932M	8/99	Original version
	8/99	AC supply voltage changed from 12-30 VAC to 14-30 VAC